SEQUENCE LISTING

<110> Corrado FOGHER

<120> Food flours with specific technological characteristics and low allergenicity

<130> 4161-12 / BX1898R

<140> US 10/534,742
<141> 2005-05-12

<150> PCT/IB2003/005092
<151> 2003-11-12

<150> IT BO2002A000714
<151> 2002-11-13

<160> 44

<170> MS Word

<210> 1
<211> 830
<212> PRT
<213> Wheat

<400> 1

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Met Thr Lys Arg Leu Val Leu Phe Ala Ala Val Val Val Ala Leu Val
1               5                  10                  15

Ala Leu Thr Ala Ala Glu Gly Glu Ala Ser Gly Gln Leu Gln Cys Glu
            20                  25                  30

Arg Glu Leu Gln Glu His Ser Leu Lys Ala Cys Arg Gln Val Val Asp
        35                  40                  45

Gln Gln Leu Arg Asp Val Ser Pro Glu Cys Gln Pro Val Gly Gly Gly
    50                  55                  60

Pro Val Ala Arg Gln Tyr Glu Gln Gln Val Val Val Pro Pro Lys Gly
65                  70                  75                  80

Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Pro Gln Gln Leu Gln Gln
                85                  90                  95

Ser Ile Leu Trp Gly Ile Pro Ala Leu Leu Arg Arg Tyr Tyr Leu Ser
            100                 105                 110

Val Thr Ser Pro Gln Gln Val Ser Tyr Tyr Pro Gly Gln Ala Ser Ser
        115                 120                 125

Gln Arg Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Glu Tyr
    130                 135                 140
```

```
Tyr Leu Thr Ser Pro Gln Gln Ser Gly Gln Trp Gln Gln Pro Gly Gln
145                 150                 155                 160

Gly Gln Ala Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Glu
                165                 170                 175

Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Trp Gln Pro Glu Gln Leu Gln
            180                 185                 190

Gln Pro Thr Gln Gly Gln Gln Arg Gln Gln Pro Gly Gln Gly Gln Gln
        195                 200                 205

Leu Arg Gln Gly Gln Gln Gly Gln Gln Ser Gly Gln Gly Gln Pro Arg
    210                 215                 220

Tyr Tyr Pro Thr Ser Ser Gln Gln Pro Gly Gln Leu Gln Gln Leu Ala
225                 230                 235                 240

Gln Gly Gln Gln Gly Gln Gln Pro Glu Arg Gly Gln Gln Gly Gln Gln
                245                 250                 255

Ser Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln Gly Gln Gln Pro
            260                 265                 270

Gly Gln Lys Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Ile
        275                 280                 285

Ser Pro Gln Gln Leu Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln Leu
    290                 295                 300

Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Ser Gly
305                 310                 315                 320

Tyr Tyr Pro Thr Ser Ala Gln Gln Pro Gly Gln Leu Gln Gln Ser Thr
                325                 330                 335

Gln Glu Gln Gln Leu Gly Gln Glu Gln Gln Asp Gln Gln Ser Gly Gln
            340                 345                 350

Gly Arg Gln Gly Gln Gln Ser Gly Gln Arg Gln Gln Asp Gln Gln Ser
        355                 360                 365

Gly Gln Gly Gln Gln Pro Gly Gln Arg Gln Pro Gly Tyr Tyr Ser Thr
    370                 375                 380

Ser Pro Gln Gln Leu Gly Gln Gly Gln Pro Arg Tyr Tyr Pro Thr Ser
385                 390                 395                 400

Pro Gln Gln Pro Gly Gln Glu Gln Gln Pro Arg Gln Leu Gln Gln Pro
                405                 410                 415

Glu Gln Gly Gln Gln Gly Gln Gln Pro Glu Gln Gly Gln Gln Gly Gln
            420                 425                 430

Gln Pro Gly Gln Gly Glu Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
        435                 440                 445
```

Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro
450 455 460

Gln Gln Ser Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln
465 470 475 480

Gln Ser Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln Pro Gly Gln
485 490 495

Glu Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro
500 505 510

Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
515 520 525

Ser Pro Gln Gln Ser Gly Gln Glu Gln Gln Leu Glu Gln Trp Gln Gln
530 535 540

Ser Gly Gln Gly Gln Pro Gly His Tyr Pro Thr Ser Pro Leu Gln Pro
545 550 555 560

Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ile Gly
565 570 575

Gln Gly Gln Gln Pro Gly Gln Leu Gln Gln Pro Thr Gln Gly Gln Gln
580 585 590

Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly
595 600 605

Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln
610 615 620

Pro Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Ser Gly Gln Gly Gln Gln
625 630 635 640

Pro Gly Gln Trp Gln Gln Pro Gly Gln Gly Leu Pro Gly Tyr Tyr Pro
645 650 655

Thr Ser Ser Leu Gln Pro Glu Gln Gly Gln Gln Gly Tyr Tyr Pro Thr
660 665 670

Ser Gln Gln Gln Pro Gly Gln Gly Pro Gln Pro Gly Gln Trp Gln Gln
675 680 685

Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser
690 695 700

Gly Gln Gly Gln Gln Pro Gly Gln Trp Leu Gln Pro Gly Gln Trp Leu
705 710 715 720

Gln Ser Gly Tyr Tyr Leu Thr Ser Pro Gln Gln Leu Gly Gln Gly Gln
725 730 735

Gln Pro Arg Gln Trp Leu Gln Pro Arg Gln Gly Gln Gln Gly Tyr Tyr
740 745 750

```
Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln Gly
        755                 760                 765

Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln
    770                 775                 780

Gln Gly Tyr Asp Ser Pro Tyr His Val Ser Ala Glu His Gln Ala Ala
785                 790                 795                 800

Ser Leu Lys Val Ala Lys Ala Gln Gln Leu Ala Ala Gln Leu Pro Ala
                805                 810                 815

Met Cys Arg Leu Glu Gly Gly Asp Ala Leu Leu Ala Ser Gln
            820                 825                 830
```

<210> 2
<211> 815
<212> PRT
<213> Wheat

<400> 2

```
Met Thr Lys Arg Leu Val Leu Phe Ala Ala Val Val Val Ala Leu Val
1               5                   10                  15

Ala Leu Thr Ala Ala Glu Gly Glu Ala Ser Gly Gln Leu Gln Cys Glu
            20                  25                  30

Arg Glu Leu Gln Glu His Ser Leu Lys Ala Cys Arg Gln Val Val Asp
        35                  40                  45

Gln Gln Leu Arg Asp Val Ser Pro Glu Cys Gln Pro Val Gly Gly Gly
    50                  55                  60

Pro Val Ala Arg Gln Tyr Glu Gln Gln Val Val Val Pro Pro Lys Gly
65                  70                  75                  80

Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Pro Gln Gln Leu Gln Gln
                85                  90                  95

Ser Ile Leu Trp Gly Ile Pro Ala Leu Leu Arg Arg Tyr Tyr Leu Ser
            100                 105                 110

Val Thr Ser Pro Gln Gln Val Ser Tyr Tyr Pro Gly Gln Ala Ser Ser
        115                 120                 125

Gln Arg Pro Gly Gln Gly Gln Gln Glu Tyr Tyr Leu Thr Ser Pro Gln
    130                 135                 140

Gln Ser Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Ser Gly Tyr Tyr
145                 150                 155                 160

Pro Thr Ser Pro Gln Gln Ser Gly Gln Lys Gln Pro Gly Tyr Tyr Pro
                165                 170                 175
```

Thr Ser Pro Trp Gln Pro Glu Gln Leu Gln Gln Pro Thr Gln Gly Gln
180 185 190

Gln Arg Gln Gln Pro Gly Gln Gly Gln Gln Leu Arg Gln Gly Gln Gln
195 200 205

Gly Gln Gln Ser Gly Gln Gly Gln Pro Arg Tyr Tyr Pro Thr Ser Ser
210 215 220

Gln Gln Pro Gly Gln Leu Gln Gln Leu Ala Gln Gly Gln Gln Gly Gln
225 230 235 240

Gln Pro Glu Arg Gly Gln Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln
245 250 255

Leu Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Lys Gln Gln Ser
260 265 270

Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Ile Ser Pro Gln Gln Leu Gly
275 280 285

Gln Gly Gln Gln Ser Gly Gln Gly Gln Leu Gly Tyr Tyr Pro Thr Ser
290 295 300

Pro Gln Gln Ser Gly Gln Gly Gln Ser Gly Tyr Tyr Pro Thr Ser Ala
305 310 315 320

Gln Gln Pro Gly Gln Leu Gln Gln Ser Thr Gln Glu Gln Gln Leu Gly
325 330 335

Gln Glu Gln Gln Asp Gln Gln Ser Gly Gln Gly Arg Gln Gly Gln Gln
340 345 350

Ser Gly Gln Arg Gln Gln Asp Gln Gln Ser Gly Gln Gly Gln Gln Pro
355 360 365

Gly Gln Arg Gln Pro Gly Tyr Tyr Ser Thr Ser Pro Gln Gln Leu Gly
370 375 380

Gln Gly Gln Pro Arg Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln
385 390 395 400

Glu Gln Gln Pro Arg Gln Leu Gln Gln Pro Glu Gln Gly Gln Gln Gly
405 410 415

Gln Gln Pro Glu Gln Gly Gln Gln Gly Gln Gln Gln Arg Gln Gly Glu
420 425 430

Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln
435 440 445

Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
450 455 460

Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Leu Gln
465 470 475 480

Gln Pro Ala Gln Gly Gln Gln Pro Gly Gln Glu Gln Gln Gly Gln Gln
485 490 495

Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro
500 505 510

Thr Ser Pro Gln Gln Ser Gly Gln Glu Gln Gln Leu Glu Gln Trp Gln
515 520 525

Gln Ser Gly Gln Gly Gln Pro Gly His Tyr Pro Thr Ser Pro Leu Gln
530 535 540

Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ile
545 550 555 560

Gly Gln Gly Gln Gln Pro Gly Gln Leu Gln Gln Pro Thr Gln Gly Gln
565 570 575

Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Glu
580 585 590

Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly
595 600 605

Gln Pro Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Ser Gly Gln Gly Gln
610 615 620

Gln Pro Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr
625 630 635 640

Pro Thr Ser Ser Leu Gln Pro Glu Gln Gly Gln Gln Gly Tyr Tyr Pro
645 650 655

Thr Ser Gln Gln Gln Pro Gly Gln Gly Pro Gln Pro Gly Gln Trp Gln
660 665 670

Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
675 680 685

Ser Gly Gln Gly Gln Gln Pro Gly Gln Trp Leu Gln Pro Gly Gln Trp
690 695 700

Leu Gln Ser Gly Tyr Tyr Leu Thr Ser Pro Gln Gln Leu Gly Gln Gly
705 710 715 720

Gln Gln Pro Arg Gln Trp Leu Gln Pro Arg Gln Gly Gln Gln Gly Tyr
725 730 735

Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln
740 745 750

Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
755 760 765

Gln Gln Gly Tyr Asp Ser Pro Tyr His Val Ser Ala Glu His Gln Ala
770 775 780

```
Ala Ser Leu Lys Val Ala Lys Ala Gln Gln Leu Ala Ala Gln Leu Pro
785                 790                 795                 800

Ala Met Cys Arg Leu Glu Gly Gly Asp Ala Leu Leu Ala Ser Gln
                805                 810                 815
```

<210> 3
<211> 839
<212> PRT
<213> Wheat

<400> 3

```
Met Ala Lys Arg Leu Val Leu Phe Val Ala Val Val Val Ala Leu Val
1               5                   10                  15

Ala Leu Thr Val Ala Glu Gly Glu Ala Ser Glu Gln Leu Gln Cys Glu
            20                  25                  30

Arg Glu Leu Gln Glu Leu Gln Glu Arg Glu Leu Lys Ala Cys Gln Gln
        35                  40                  45

Val Met Asp Gln Gln Leu Arg Asp Ile Ser Pro Glu Cys His Pro Val
    50                  55                  60

Val Val Ser Pro Val Ala Gly Gln Tyr Glu Gln Gln Ile Val Val Pro
65                  70                  75                  80

Pro Lys Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Pro Gln Gln
                85                  90                  95

Leu Gln Gln Arg Ile Phe Trp Gly Ile Pro Ala Leu Leu Lys Arg Tyr
            100                 105                 110

Tyr Pro Ser Val Thr Cys Pro Gln Gln Val Ser Tyr Tyr Pro Gly Gln
        115                 120                 125

Ala Ser Pro Gln Arg Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln
    130                 135                 140

Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Trp Gln Gln
145                 150                 155                 160

Pro Glu Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro
                165                 170                 175

Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln Pro Gly Gln Gly Gln
            180                 185                 190

Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser
        195                 200                 205

Ser Gln Leu Gln Pro Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln
    210                 215                 220

Gly Gln Gln Pro Gly Gln Ala Gln Gln Gly Gln Gln Pro Gly Gln Gly
225                 230                 235                 240
```

Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln
245 250 255

Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln
260 265 270

Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Ser Gly Gln Gly Gln Pro Gly
275 280 285

Tyr Tyr Pro Thr Ser Leu Gln Gln Leu Gly Gln Gly Gln Ser Gly Tyr
290 295 300

Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln
305 310 315 320

Leu Gln Gln Pro Ala Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly
325 330 335

Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln
340 345 350

Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
355 360 365

Ser Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Ser Gln Gln Pro
370 375 380

Thr Gln Ser Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Val Gly
385 390 395 400

Gln Gly Gln Gln Ala Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln
405 410 415

Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
420 425 430

Gln Pro Gly Tyr Tyr Leu Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln
435 440 445

Gln Pro Gly Gln Leu Gln Gln Ser Ala Gln Gly Gln Lys Gly Gln Gln
450 455 460

Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro
465 470 475 480

Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr
485 490 495

Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Pro Gly Gln
500 505 510

Trp Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro
515 520 525

Leu Gln Pro Gly Gln Gly Gln Pro Gly Tyr Asp Pro Thr Ser Pro Gln
530 535 540

```
Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Leu Gln Gln Pro Ala Gln
545                 550                 555                 560

Gly Gln Gln Gly Gln Gln Leu Ala Gln Gly Gln Gln Gly Gln Gln Pro
                565                 570                 575

Ala Gln Val Gln Gln Gly Gln Gln Pro Ala Gln Gly Gln Gln Gly Gln
            580                 585                 590

Gln Leu Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
        595                 600                 605

Gly Gln Gln Pro Ala Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly
    610                 615                 620

Gln His Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly
625                 630                 635                 640

Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Trp Tyr Tyr Pro Thr Ser
                645                 650                 655

Pro Gln Glu Ser Gly Gln Gly Gln Gln Pro Gly Gln Trp Gln Gln Pro
            660                 665                 670

Gly Gln Gly Gln Pro Gly Tyr Tyr Leu Thr Phe Ser Val Ala Ala Arg
        675                 680                 685

Thr Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln
    690                 695                 700

Gly Gln Gln Pro Gly Gln Trp Gln Gln Ser Gly Gln Gly Gln His Trp
705                 710                 715                 720

Tyr Tyr Pro Thr Ser Pro Lys Leu Ser Gly Gln Gly Gln Arg Pro Gly
                725                 730                 735

Gln Trp Leu Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
            740                 745                 750

Pro Gln Gln Pro Pro Gln Gly Gln Gln Leu Gly Gln Trp Leu Gln Pro
        755                 760                 765

Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Thr Gly
    770                 775                 780

Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Ser Ser Tyr
785                 790                 795                 800

His Val Ser Val Glu His Gln Ala Ala Ser Leu Lys Val Ala Lys Ala
                805                 810                 815

Gln Gln Leu Ala Ala Gln Leu Pro Ala Met Cys Arg Leu Glu Gly Gly
            820                 825                 830

Asp Ala Leu Ser Ala Ser Gln
        835
```

<210> 4
<211> 838
<212> PRT
<213> Wheat

<400> 4

```
Met Ala Lys Arg Leu Val Leu Phe Val Ala Val Val Val Ala Leu Val
1               5                  10                  15

Ala Leu Thr Val Ala Glu Gly Glu Ala Ser Glu Gln Leu Gln Cys Glu
            20                  25                  30

Arg Glu Leu Gln Glu Leu Gln Glu Arg Glu Leu Lys Ala Cys Gln Gln
        35                  40                  45

Val Met Asp Gln Gln Leu Arg Asp Ile Ser Pro Glu Cys His Pro Val
    50                  55                  60

Val Val Ser Pro Val Ala Gly Gln Tyr Glu Gln Gln Ile Val Val Pro
65                  70                  75                  80

Lys Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Pro Gln Gln Leu
                85                  90                  95

Gln Gln Arg Ile Phe Trp Gly Ile Pro Ala Leu Leu Lys Arg Tyr Tyr
            100                 105                 110

Pro Ser Val Thr Ser Pro Gln Gln Val Ser Tyr Tyr Pro Gly Gln Ala
        115                 120                 125

Ser Pro Gln Arg Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
    130                 135                 140

Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro
145                 150                 155                 160

Gly Gln Trp Gln Gln Pro Glu Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
                165                 170                 175

Ser Pro Gln Gln Pro Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln
            180                 185                 190

Pro Gly Gln Gly Gln Gln Gly Arg Gln Pro Gly Gln Gly Gln Pro Gly
        195                 200                 205

Tyr Tyr Pro Thr Ser Ser Gln Leu Gln Pro Gly Gln Leu Gln Gln Pro
    210                 215                 220

Ala Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln
225                 230                 235                 240

Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln
                245                 250                 255
```

Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Leu
260 265 270

Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Ser Gly
275 280 285

Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Leu Gly Gln
290 295 300

Gly Gln Ser Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly
305 310 315 320

Gln Gln Pro Gly Gln Leu Gln Gln Pro Ala Gln Gly Gln Gln Pro Glu
325 330 335

Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln
340 345 350

Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro
355 360 365

Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
370 375 380

Ser Ser Gln Gln Pro Thr Gln Ser Gln Gln Pro Gly Gln Gly Gln Gln
385 390 395 400

Gly Gln Gln Val Gly Gln Gly Gln Gln Ala Gln Gln Pro Gly Gln Gly
405 410 415

Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Leu
420 425 430

Gln Ser Gly Gln Gly Gln Pro Gly Tyr Tyr Leu Thr Ser Pro Gln Gln
435 440 445

Ser Gly Gln Gly Gln Gln Pro Gly Gln Leu Gln Gln Ser Ala Gln Gly
450 455 460

Gln Lys Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln
465 470 475 480

Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln
485 490 495

Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
500 505 510

Gln Gln Pro Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr
515 520 525

Tyr Pro Thr Ser Pro Leu Gln Pro Gly Gln Gly Gln Pro Gly Tyr Asp
530 535 540

Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Leu
545 550 555 560

```
Gln Gln Pro Ala Gln Gly Gln Gln Gly Gln Gln Leu Ala Gln Gly Gln
                565                 570                 575

Gln Gly Gln Gln Pro Ala Gln Val Gln Gln Gly Gln Gln Pro Ala Gln
            580                 585                 590

Gly Gln Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln Gly Gln Gln Pro
        595                 600                 605

Gly Gln Gly Gln Gln Pro Ala Gln Gly Gln Gln Gly Gln Gln Pro Gly
    610                 615                 620

Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln
625                 630                 635                 640

Gly Gln Pro Trp Tyr Tyr Pro Thr Ser Pro Gln Glu Ser Gly Gln Gly
                645                 650                 655

Gln Gln Pro Gly Gln Trp Gln Gln Pro Gly Gln Trp Gln Gln Pro Gly
            660                 665                 670

Gln Gly Gln Pro Gly Tyr Tyr Leu Thr Ser Pro Leu Gln Leu Gly Gln
        675                 680                 685

Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly
    690                 695                 700

Gln Gln Pro Gly Gln Trp Gln Gln Ser Gly Gln Gly Gln His Gly Tyr
705                 710                 715                 720

Tyr Pro Thr Ser Pro Gln Leu Ser Gly Gln Gly Gln Arg Pro Gly Gln
                725                 730                 735

Trp Leu Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro
            740                 745                 750

Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln Trp Leu Gln Pro Gly
        755                 760                 765

Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Thr Gly Gln
    770                 775                 780

Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Ser Ser Tyr His
785                 790                 795                 800

Val Ser Val Glu His Gln Ala Ala Ser Leu Lys Val Ala Lys Ala Gln
                805                 810                 815

Gln Leu Ala Ala Gln Leu Pro Ala Met Cys Arg Leu Glu Gly Gly Asp
            820                 825                 830

Ala Leu Ser Ala Ser Gln
        835
```

<210> 5
<211> 789

<212> PRT
<213> Wheat

<400> 5

Met Ala Lys Arg Leu Val Leu Phe Ala Ala Val Val Val Ala Leu Val
1 5 10 15

Ala Leu Thr Ala Ala Glu Gly Glu Ala Ser Gly Gln Leu Gln Cys Glu
20 25 30

His Glu Leu Glu Ala Cys Gln Gln Val Val Asp Gln Gln Leu Arg Asp
35 40 45

Val Ser Pro Gly Cys Arg Pro Ile Thr Val Ser Pro Gly Thr Arg Gln
50 55 60

Tyr Glu Gln Gln Pro Val Val Pro Ser Lys Ala Gly Ser Phe Tyr Pro
65 70 75 80

Ser Glu Thr Thr Pro Ser Gln Gln Leu Gln Gln Met Ile Phe Trp Gly
85 90 95

Ile Pro Ala Leu Leu Arg Arg Tyr Tyr Pro Ser Val Thr Ser Ser Gln
100 105 110

Gln Gly Ser Tyr Tyr Pro Gly Gln Ala Ser Pro Gln Gln Ser Gly Gln
115 120 125

Gly Gln Gln Pro Gly Gln Glu Gln Gln Pro Gly Gln Gly Gln Gln Asp
130 135 140

Gln Gln Pro Gly Gln Arg Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln
145 150 155 160

Gln Pro Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Pro Gly Tyr Tyr
165 170 175

Pro Thr Ser Gln Gln Pro Gly Gln Lys Gln Gln Ala Gly Gln Gly Gln
180 185 190

Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
195 200 205

Ser Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro
210 215 220

Thr Ser Pro Gln Gln Ser Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln
225 230 235 240

Gln Pro Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Gln Gln
245 250 255

Pro Gly Gln Gly Gln Arg Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro
260 265 270

```
Ile Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln
        275                 280                 285

Pro Gly Tyr Tyr Pro Thr Ser Leu Arg Gln Pro Gly Gln Trp Gln Gln
    290                 295                 300

Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Gln Pro
305                 310                 315                 320

Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr
                325                 330                 335

Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Pro
            340                 345                 350

Gly Tyr Tyr Pro Thr Ser Gln Gln Ser Glu Gln Gly Gln Gln Pro Gly
        355                 360                 365

Gln Gly Lys Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
    370                 375                 380

Pro Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Pro Gly
385                 390                 395                 400

Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Ser Gly
                405                 410                 415

Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln
            420                 425                 430

Gly Gln Gln Pro Gly Gln Gly Gln Ser Gly Tyr Phe Pro Thr Ser Arg
        435                 440                 445

Gln Gln Ser Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Ser Gly
    450                 455                 460

Gln Gly Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Ala Tyr Tyr
465                 470                 475                 480

Pro Thr Ser Ser Gln Gln Ser Arg Gln Arg Gln Gln Ala Gly Gln Trp
                485                 490                 495

Gln Arg Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro Gln
            500                 505                 510

Gln Pro Gly Gln Glu Gln Gln Ser Gly Gln Ala Gln Gln Ser Gly Gln
        515                 520                 525

Trp Gln Leu Val Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Leu
    530                 535                 540

Gln Gln Pro Ala Gln Gly Gln Gln Pro Ala Gln Gly Gln Gln Ser Ala
545                 550                 555                 560

Gln Glu Gln Gln Pro Gly Gln Ala Gln Gln Ser Gly Gln Trp Gln Leu
                565                 570                 575
```

```
Val Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Leu Gln Gln Pro
            580                 585                 590

Ala Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly
        595                 600                 605

Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln
    610                 615                 620

Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
625                 630                 635                 640

Gln Gln Pro Gly Gln Gly Gln Gln Pro Arg Gln Gly Gln Gln Gly Tyr
                645                 650                 655

Tyr Pro Ile Ser Pro Gln Gln Ser Gly Gln Gly Gln Gln Pro Gly Gln
            660                 665                 670

Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly
        675                 680                 685

Gln Gln Pro Gly His Glu Gln Gln Pro Gly Gln Trp Leu Gln Pro Gly
    690                 695                 700

Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Ser Gln Gln Ser Gly Gln
705                 710                 715                 720

Gly His Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu
                725                 730                 735

Trp Gln Pro Gly Gln Gly Gln Gln Gly Tyr Ala Ser Pro Tyr His Val
            740                 745                 750

Ser Ala Glu Tyr Gln Ala Ala Arg Leu Lys Val Ala Lys Ala Gln Gln
        755                 760                 765

Leu Ala Ala Gln Leu Pro Ala Met Cys Arg Leu Glu Gly Ser Asp Ala
    770                 775                 780

Leu Ser Thr Arg Gln
785
```

<210> 6
<211> 660
<212> PRT
<213> Wheat

<400> 6

```
Met Ala Lys Arg Leu Val Leu Phe Ala Ala Val Val Ile Ala Leu Val
1               5                   10                  15

Ala Leu Thr Thr Ala Glu Gly Glu Ala Ser Arg Gln Leu Gln Cys Glu
            20                  25                  30
```

Arg Glu Leu Gln Glu Ser Ser Leu Glu Ala Cys Arg Gln Val Val Asp
35 40 45

Gln Gln Leu Ala Gly Arg Leu Pro Trp Ser Thr Gly Leu Gln Met Arg
50 55 60

Cys Cys Gln Gln Leu Arg Asp Val Ser Ala Lys Cys Arg Ser Val Ala
65 70 75 80

Val Ser Gln Val Ala Arg Gln Tyr Glu Gln Thr Val Val Pro Pro Lys
85 90 95

Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Leu Gln Gln Leu Gln
100 105 110

Gln Gly Ile Phe Trp Gly Thr Ser Ser Gln Thr Val Gln Gly Tyr Tyr
115 120 125

Pro Ser Val Thr Ser Pro Arg Gln Gly Ser Tyr Tyr Pro Gly Gln Ala
130 135 140

Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Lys Trp Gln Glu
145 150 155 160

Pro Gly Gln Gly Gln Gln Trp Tyr Tyr Pro Thr Ser Leu Gln Gln Pro
165 170 175

Gly Gln Gly Gln Gln Ile Gly Lys Gly Lys Gln Gly Tyr Tyr Pro Thr
180 185 190

Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln
195 200 205

Gly Tyr Tyr Pro Thr Ser Pro Gln His Thr Gly Gln Arg Gln Gln Pro
210 215 220

Val Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln Pro Glu Gln Gly Gln
225 230 235 240

Gln Pro Gly Gln Trp Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
245 250 255

Leu Gly Gln Gly Gln Gln Pro Gly Gln Trp Gln Gln Ser Gly Gln Gly
260 265 270

Gln Gln Gly His Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln
275 280 285

Gln Gly His Tyr Leu Ala Ser Gln Gln Gln Pro Ala Gln Gly Gln Gln
290 295 300

Gly His Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly Gln Gln Gly
305 310 315 320

His Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly Gln Gln Gly His
325 330 335

Tyr Pro Ala Ser Gln Gln Glu Pro Gly Gln Gly Gln Gln Gly Gln Ile
340 345 350

Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly Gln Gln Gly His Tyr Pro
355 360 365

Ala Ser Leu Gln Gln Pro Gly Gln Gln Gly His Tyr Pro Thr Ser Leu
370 375 380

Gln Gln Leu Gly Gln Gly Gln Gln Ile Gly Gln Pro Gly Gln Lys Gln
385 390 395 400

Gln Pro Gly Gln Gly Gln Gln Thr Gly Gln Gly Gln Gln Pro Glu Gln
405 410 415

Glu Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu
420 425 430

Gln Gln Pro Gly Gln Gly Gln Gln Gln Gly Gln Gly Gln Gln Gly Tyr
435 440 445

Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gly His Tyr
450 455 460

Pro Ala Ser Leu Gln Gln Pro Gly Gln Gly Gln Gly Gln Pro Gly Gln
465 470 475 480

Arg Gln Gln Pro Gly Gln Gly Gln His Pro Glu Gln Gly Gln Gln Pro
485 490 495

Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly
500 505 510

Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
515 520 525

Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly
530 535 540

His Cys Pro Met Ser Pro Gln Gln Thr Gly Gln Ala Gln Gln Leu Gly
545 550 555 560

Gln Gly Gln Gln Ile Gly Gln Val Gln Gln Pro Gly Gln Gly Gln Gln
565 570 575

Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Ser
580 585 590

Gly Gln Gly Gln Gln Ser Gly Gln Gly His Gln Pro Gly Gln Gly Gln
595 600 605

Gln Ser Gly Gln Glu Lys Gln Gly Tyr Asp Ser Pro Tyr His Val Ser
610 615 620

Ala Glu Gln Gln Ala Ala Ser Pro Met Val Ala Lys Ala Gln Gln Pro
625 630 635 640

```
Ala Thr Gln Leu Pro Thr Val Cys Arg Met Glu Gly Gly Asp Ala Leu
                645                 650                 655

Ser Ala Ser Gln
            660
```

<210> 7
<211> 648
<212> PRT
<213> Wheat

<400> 7

```
Met Ala Lys Arg Leu Val Leu Phe Ala Ala Val Val Ile Ala Leu Val
1               5                  10                  15

Ala Leu Thr Thr Ala Glu Gly Glu Ala Ser Arg Gln Leu Gln Cys Glu
            20                  25                  30

Arg Glu Leu Gln Glu Ser Ser Leu Glu Ala Cys Arg Gln Val Val Asp
        35                  40                  45

Gln Gln Leu Ala Gly Arg Leu Pro Trp Ser Thr Gly Leu Gln Met Arg
    50                  55                  60

Cys Cys Gln Gln Leu Arg Asp Val Ser Ala Lys Cys Arg Ser Val Ala
65                  70                  75                  80

Val Ser Gln Val Ala Arg Gln Tyr Glu Gln Thr Val Val Pro Pro Lys
                85                  90                  95

Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Leu Gln Gln Leu Gln
            100                 105                 110

Gln Gly Ile Phe Trp Gly Thr Ser Ser Gln Thr Val Gln Gly Tyr Tyr
        115                 120                 125

Pro Gly Val Thr Ser Pro Arg Gln Gly Ser Tyr Tyr Pro Gly Gln Ala
    130                 135                 140

Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Lys Trp Gln Glu
145                 150                 155                 160

Pro Gly Gln Gly Gln Gln Trp Tyr Tyr Pro Thr Ser Leu Gln Gln Pro
                165                 170                 175

Gly Gln Gly Gln Gln Ile Gly Lys Gly Gln Gln Gly Tyr Tyr Pro Thr
            180                 185                 190

Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
        195                 200                 205

Leu Gln His Thr Gly Gln Arg Gln Gln Pro Val Gln Gly Gln Gln Pro
    210                 215                 220
```

Glu Gln Gly Gln Gln Pro Gly Gln Trp Gln Gln Gly Tyr Tyr Pro Thr
225 230 235 240

Ser Pro Gln Gln Leu Gly Gln Gly Gln Gln Pro Arg Gln Trp Gln Gln
245 250 255

Ser Gly Gln Gly Gln Gln Gly His Tyr Pro Thr Ser Leu Gln Gln Pro
260 265 270

Gly Gln Gly Gly Gln Gln Gly His Tyr Leu Ala Ser Gln Gln Gln Pro Gly
275 280 285

Gln Gly Gln Gln Gly His Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln
290 295 300

Gly Gln Gln Gly His Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly
305 310 315 320

Gln Gln Gly His Tyr Pro Ala Ser Gln Gln Glu Pro Gly Gln Gly Gln
325 330 335

Gln Gly Gln Ile Pro Ala Ser Gln Gln Gln Pro Gly Gln Gly Gln Gln
340 345 350

Gly His Tyr Pro Ala Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gly
355 360 365

His Tyr Pro Thr Ser Leu Gln Gln Leu Gly Gln Gly Gln Gln Thr Gly
370 375 380

Gln Pro Gly Gln Lys Gln Gln Pro Gly Gln Gly Gln Gln Thr Gly Gln
385 390 395 400

Gly Gln Gln Pro Glu Gln Glu Gln Gln Pro Gly Gln Gly Gln Gln Gly
405 410 415

Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gln Gly
420 425 430

Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln
435 440 445

Gly Gln Gln Gly His Tyr Pro Ala Ser Leu Gln Gln Pro Gly Gln Gly
450 455 460

Gln Pro Gly Gln Arg Gln Gln Pro Gly Gln Gly Gln His Pro Glu Gln
465 470 475 480

Gly Lys Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro
485 490 495

Gln Gln Pro Gly Gln Gly Gln Gln Leu Gly Gln Gly Gln Gln Gly Tyr
500 505 510

Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln
515 520 525

```
Gly Gln Gln Gly His Cys Pro Thr Ser Pro Gln Gln Ser Gly Gln Ala
    530                 535                 540

Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln Val Gln Gln Pro Gly
545                 550                 555                 560

Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Val Gln Gln Pro Gly Gln
                565                 570                 575

Gly Gln Gln Ser Gly Gln Gly Gln Gln Ser Gly Gln Gly His Gln Pro
            580                 585                 590

Gly Gln Gly Gln Gln Ser Gly Gln Glu Gln Gln Gly Tyr Asp Ser Pro
        595                 600                 605

Tyr His Val Ser Ala Glu Gln Gln Ala Ala Ser Pro Met Val Ala Lys
    610                 615                 620

Ala Gln Gln Pro Ala Thr Gln Leu Pro Thr Val Cys Arg Met Glu Gly
625                 630                 635                 640

Gly Asp Ala Leu Ser Ala Ser Gln
                645
```

<210> 8
<211> 705
<212> PRT
<213> Wheat

<400> 8

```
Met Ala Lys Arg Leu Val Leu Phe Ala Thr Val Val Ile Thr Leu Val
1               5                   10                  15

Ala Leu Thr Ala Ala Glu Gly Glu Ala Ser Arg Gln Leu Gln Cys Glu
            20                  25                  30

Arg Glu Leu Gln Glu Ser Ser Leu Glu Ala Cys Arg Gln Val Val Asp
        35                  40                  45

Gln Gln Leu Ala Gly Arg Leu Pro Trp Ser Thr Gly Leu Gln Met Arg
    50                  55                  60

Cys Cys Gln Gln Leu Arg Asp Val Ser Ala Lys Cys Arg Pro Val Ala
65                  70                  75                  80

Val Ser Gln Val Val Arg Gln Tyr Glu Gln Thr Val Val Pro Pro Lys
                85                  90                  95

Gly Gly Ser Phe Tyr Pro Gly Glu Thr Thr Pro Leu Gln Gln Leu Gln
            100                 105                 110

Gln Val Ile Phe Trp Gly Thr Ser Ser Gln Thr Val Gln Gly Tyr Tyr
        115                 120                 125
```

Pro Ser Val Ser Ser Pro Gln Gln Gly Pro Tyr Tyr Pro Gly Gln Ala
130 135 140

Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Lys Trp Gln Glu
145 150 155 160

Leu Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu His Gln Ser
165 170 175

Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Ser Ser Leu Gln Gln Pro Gly
180 185 190

Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
195 200 205

Leu Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln Gly
210 215 220

Tyr Tyr Pro Thr Ser Pro Gln His Pro Gly Gln Arg Gln Gln Pro Gly
225 230 235 240

Gln Gly Gln Gln Ile Gly Gln Gly Gln Gln Leu Gly Gln Gly Arg Gln
245 250 255

Ile Gly Gln Gly Gln Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro
260 265 270

Thr Ser Pro Gln Gln Leu Gly Gln Gly Gln Gln Pro Gly Gln Trp Gln
275 280 285

Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Gln Gln Gln
290 295 300

Pro Gly Gln Gly Gln Gln Gly Gln Tyr Pro Ala Ser Gln Gln Gln Pro
305 310 315 320

Gly Gln Gly Gln Gln Gly Gln Tyr Pro Ala Ser Gln Gln Gln Pro Gly
325 330 335

Gln Gly Gln Gln Gly Gln Tyr Pro Ala Ser Gln Gln Gln Pro Gly Gln
340 345 350

Gly Gln Gln Gly His Tyr Leu Ala Ser Gln Gln Gln Pro Gly Gln Gly
355 360 365

Gln Gln Arg His Tyr Pro Ala Ser Leu Gln Gln Pro Gly Gln Gly Gln
370 375 380

Gln Gly His Tyr Thr Ala Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln
385 390 395 400

Gly His Tyr Pro Ala Ser Leu Gln Gln Val Gly Gln Gly Gln Gln Ile
405 410 415

Gly Gln Leu Gly Gln Arg Gln Gln Pro Gly Gln Gly Gln Gln Thr Arg
420 425 430

Gln Gly Gln Gln Leu Glu Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
435 440 445

Thr Arg Gln Gly Gln Gln Leu Glu Gln Gly Gln Gln Pro Gly Gln Gly
450 455 460

Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gly Gln
465 470 475 480

Gln Pro Gly Gln Ser Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr
485 490 495

Ser Ser Ser Leu Gln Gln Pro Gly Gln Gly Leu Gln Gly His Tyr Pro
500 505 510

Ala Ser Leu Gln Gln Pro Gly Gln Gly His Pro Gly Gln Arg Gln Gln
515 520 525

Pro Gly Gln Gly Gln Gln Pro Glu Gln Gly Gln Gln Pro Gly Gln Gly
530 535 540

Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Pro Gly Gln Gly Lys
545 550 555 560

Gln Leu Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln
565 570 575

Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly His Cys Pro
580 585 590

Thr Ser Pro Gln Gln Thr Gly Gln Ala Gln Gln Pro Gly Gln Gly Gln
595 600 605

Gln Ile Gly Gln Val Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr
610 615 620

Pro Ile Ser Leu Gln Gln Ser Gly Gln Gly Gln Gln Ser Gly Gln Gly
625 630 635 640

Gln Gln Ser Gly Gln Gly His Gln Leu Gly Gln Gly Gln Gln Ser Gly
645 650 655

Gln Glu Gln Gln Gly Tyr Asp Asn Pro Tyr His Val Asn Thr Glu Gln
660 665 670

Gln Thr Ala Ser Pro Lys Val Ala Lys Val Gln Gln Pro Ala Thr Gln
675 680 685

Leu Pro Ile Met Cys Arg Met Glu Gly Gly Asp Ala Leu Ser Ala Ser
690 695 700

Gln
705

<210> 9
<211> 602

<212> PRT
<213> Wheat

<400> 9

```
Met Ala Lys Arg Leu Val Leu Phe Ala Thr Val Val Ile Gly Leu Val
1               5                  10                  15

Ser Leu Thr Val Ala Glu Gly Glu Ala Ser Lys Gln Leu Gln Cys Glu
            20                  25                  30

Arg Glu Leu Gln Glu Ser Ser Leu Glu Ala Cys Arg Leu Val Val Asp
        35                  40                  45

Gln Gln Leu Ala Ser Arg Leu Pro Trp Ser Thr Gly Leu Gln Met Arg
    50                  55                  60

Cys Cys Gln Gln Leu Arg Asp Ile Ser Ala Lys Cys Arg Pro Val Ala
65                  70                  75                  80

Leu Ser Gln Val Ala Arg Gln Tyr Gly Gln Thr Ala Val Pro Pro Lys
                85                  90                  95

Gly Gly Pro Phe Tyr His Arg Glu Thr Thr Pro Leu Gln Gln Leu Gln
            100                 105                 110

Gln Gly Ile Phe Gly Gly Thr Ser Ser Gln Thr Val Gln Gly Tyr Tyr
        115                 120                 125

Pro Ser Val Ile Ser Pro Gln Gln Gly Ser Tyr Tyr Pro Gly Gln Ala
    130                 135                 140

Ser Pro Gln Gln Pro Gly Lys Trp Gln Glu Leu Gly Gln Gly Gln Gln
145                 150                 155                 160

Trp Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Gly
                165                 170                 175

Tyr Tyr Arg Thr Ser Leu Gln Gln Pro Gly Gln Arg Gln Gln Gly Tyr
            180                 185                 190

Tyr Arg Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln
        195                 200                 205

Trp Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln His Pro Gly Gln Gly
    210                 215                 220

Gln Gln Pro Gly Gln Val Gln Lys Ile Gly Gln Gly Gln Gln Pro Glu
225                 230                 235                 240

Lys Gly Gln Gln Leu Gly Gln Glu Gln Gln Ile Gly Gln Gly Gln Gln
                245                 250                 255

Pro Glu Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly
            260                 265                 270
```

Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro Gly Gln Gly Gln
275 280 285

Gln Pro Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr
290 295 300

Pro Thr Ser Leu Gln Gln Pro Val Gln Gly Gln Gln Gly His Tyr Pro
305 310 315 320

Ala Ser Gln His Gln Pro Gly Gln Gly Gln Gln Gly His Gln Pro Ala
325 330 335

Ser Leu Gln Leu Ser Gly Gln Gly Gln Gln Gly His His Pro Ala Ser
340 345 350

Leu Gln Gln Pro Gly Gln Gly Lys Gln Thr Gly Gln Arg Glu Gln Arg
355 360 365

Gln Gln Pro Gly Gln Gly Gln Gln Thr Gly Gln Gly Gln Gln Pro Glu
370 375 380

Gln Glu Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Tyr
385 390 395 400

Leu Gln Gln Pro Gly Gln Gly Gln Gln Pro Glu Gln Trp Gln Gln Pro
405 410 415

Gly Gln Gly Gln Gln Gly His Tyr Pro Ala Ser Leu Gln Gln Ser Gly
420 425 430

Gln Gly Gln Gln Gly His Tyr Pro Ala Ser Leu Gln Gln Leu Gly Gln
435 440 445

Gly Gln Pro Gly Gln Thr Gln Gln Pro Gly Gln Gly Gln Gln Pro Glu
450 455 460

Gln Glu Glu Gln Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
465 470 475 480

Pro Gln Gln Pro Gly Gln Gly Gln Gln Gly His Phe Pro Thr Ser Gly
485 490 495

Gln Ala Gln Gln Pro Gly Gln Gly Gln Gln Ile Gly Gln Ala Gln Gln
500 505 510

Leu Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Pro
515 520 525

Gly Gln Glu Gln Gln Ser Gly Gln Gly Gln Gln Leu Gly Gln Gly His
530 535 540

Gln Pro Gly Gln Gly Gln Gln Ser Gly Gln Glu Gln Gln Gly Tyr Asp
545 550 555 560

Ser Pro Tyr His Val Ser Val Glu Gln Gln Ala Ala Ser Pro Lys Val
565 570 575

```
Ala Lys Ala His His Pro Val Ala Gln Leu Pro Thr Met Cys Gln Met
            580                 585                 590

Glu Gly Gly Asp Ala Leu Ser Ala Ser Gln
        595                 600
```

<210> 10
<211> 621
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus sequence derived from wheat sequences of Table 1

<400> 10

```
Met Ala Lys Arg Leu Val Leu Phe Ala Ala Val Val Val Ala Leu Val
1               5                   10                  15

Ala Leu Thr Ala Glu Gly Glu Ala Ser Gln Leu Gln Cys Glu Arg Glu
            20                  25                  30

Leu Gln Glu Ser Leu Ala Cys Arg Gln Val Val Asp Gln Gln Leu Arg
        35                  40                  45

Asp Val Ser Pro Cys Arg Pro Val Val Ser Pro Val Ala Arg Gln Tyr
    50                  55                  60

Glu Gln Gln Val Val Pro Pro Lys Gly Gly Ser Phe Tyr Pro Gly Glu
65                  70                  75                  80

Thr Thr Pro Gln Gln Leu Gln Gln Ile Phe Trp Gly Ile Pro Ala Leu
                85                  90                  95

Leu Arg Tyr Tyr Pro Ser Val Thr Ser Pro Gln Gln Gly Ser Tyr Tyr
            100                 105                 110

Pro Gly Gln Ala Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly
        115                 120                 125

Gln Gly Gln Gln Gly Tyr Tyr Thr Ser Pro Gln Gln Pro Gly Gln Gln
    130                 135                 140

Gln Gly Gln Gly Gln Gly Tyr Tyr Pro Thr Ser Gln Gln Pro Gly Gln
145                 150                 155                 160

Gln Gln Gln Gly Gln Gln Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
                165                 170                 175

Ser Gln Pro Gly Gln Gln Gln Pro Gln Gly Gln Gln Gln Gln Gln Gly
            180                 185                 190

Gln Gln Gly Gln Gly Gln Gln Gly Gln Gly Gln Gln Gly Gln Gln Pro
        195                 200                 205
```

```
Gly Gln Gln Gln Gly Gln Gly Gln Gln Gly Gln Gln Pro Gln Gln Ser
    210                 215                 220

Gly Gln Gly Gln Gly Tyr Tyr Pro Thr Ser Gln Gln Pro Gly Gln Gly
225                 230                 235                 240

Gln Gln Gln Gln Gln Gln Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln
                245                 250                 255

Gly Gln Gln Pro Gly Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly
            260                 265                 270

Tyr Tyr Pro Thr Ser Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Pro
        275                 280                 285

Ser Gln Gln Pro Gly Gln Gln Pro Gln Gln Gly Gln Gln Gln Pro Gln
    290                 295                 300

Gly Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr Ser Pro
305                 310                 315                 320

Gln Gln Ser Gly Gln Gly Gln Gly Tyr Tyr Thr Ser Pro Gln Gln Ser
                325                 330                 335

Gly Gln Gln Gln Pro Gln Gln Gln Gly Gln Gln Gly Gln Gln Pro Gly
            340                 345                 350

Gln Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Gln Pro Gly Gln Gly
        355                 360                 365

Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly Gln Gln Gln Pro
    370                 375                 380

Gly Gln Trp Gln Gln Pro Gly Gln Gly Gln Pro Gly Tyr Tyr Pro Thr
385                 390                 395                 400

Ser Pro Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser
                405                 410                 415

Pro Gln Gln Pro Gly Gln Gly Gln Gln Pro Gln Gln Gln Pro Gln Gly
            420                 425                 430

Gln Gln Gln Gln Gln Gln Gln Gln Pro Gln Gly Gln Gln Pro Gly Gln
        435                 440                 445

Gly Gln Gln Pro Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro
    450                 455                 460

Gln Gln Ser Gly Gln Gly Gln Gln Gly Gln Gly Tyr Tyr Thr Gly Gln
465                 470                 475                 480

Gln Gly Tyr Tyr Pro Thr Ser Gln Gln Pro Gly Gln Gly Gln Gln Pro
                485                 490                 495

Gly Gln Gln Gln Gln Gly Gln Tyr Tyr Pro Ser Pro Ser Gly Gln Gly
            500                 505                 510
```

Gln Pro Gly Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Gly Gln
515 520 525

Gly Gln Gln Pro Gly Gln Gln Gly Gln Trp Leu Gln Pro Gly Gln Gly
530 535 540

Gln Gln Gly Tyr Tyr Pro Thr Ser Leu Gln Gln Gly Gln Gly Gln Gln
545 550 555 560

Ser Gly Gln Gly Gln Gln Gly Tyr Tyr Pro Gln Gln Ser Gly Gln Gln
565 570 575

Gln Gly Tyr Asp Ser Pro Tyr His Val Ser Ala Glu Gln Ala Ala Ser
580 585 590

Leu Lys Val Ala Lys Ala Gln Gln Leu Ala Ala Gln Leu Pro Ala Met
595 600 605

Cys Arg Leu Glu Gly Gly Asp Ala Leu Ser Ala Ser Gln
610 615 620

<210> 11
<211> 18
<212> PRT
<213> Wheat

<400> 11

Leu Lys Val Ala Lys Ala Gln Gln Leu Ala Ala Gln Leu Pro Ala Met
1 5 10 15

Cys Arg

<210> 12
<211> 2073
<212> DNA
<213> Guinea pig

<220>
<221> CDS
<222> (1)..(2073)
<223> transglutaminase enzyme

<400> 12

atg gca gag gat ctg atc ctg gag aga tgt gat ttg cag ctg gag gtc 48

aat ggc cgc gac cac cgc acg gcc gac ctg tgc cgg gag agg ctg gtg 96

ttg cgg cgg ggc cag ccc ttc tgg ctg acg ctg cac ttt gag ggc cgt 144

ggc tac gag gct ggt gtg gac act ctc acc ttc aac gct gtg acc ggc 192

cca gat ccc agt gag gag gcc ggg act atg gcc cgg ttc tca ctg tcc 240

agt gct gtc gag ggg ggc acc tgg tca gcc tca gca gtg gac cag cag 288

gac agc act gtc tcg ctg ctg ctc agc acc cca gct gat gcc ccc att 336

ggc ctg tat cgc ctc agc ctg gag gcc tcc act ggt tac cag ggc tcc 384

agc ttc gta ctg ggc cac ttc atc ctg ctc tac aat cct cgg tgc cca 432

gcg gat gct gtc tat atg gac tca gac caa gag cgg cag gag tat gtg 480

ctc acc caa cag ggc ttc atc tac cag ggc tcg gcc aag ttc atc aat 528

ggc ata cct tgg aac ttc ggg cag ttt gaa gat ggg atc ctg gat att 576

tgc ctg atg ctc ttg gac acc aac ccc aag ttc ctg aag aat gct ggc 624

caa gac tgc tcg cgc cgc agc aga cct gtc tac gtg ggc cgg gtg gtg 672

agc gcc atg gtc aac tgc aat gac gat cag ggc gtg ctt cag gga cgc 720

tgg gac aac aac tac agt gat ggt gtc agc ccc atg tcc tgg atc ggc 768

agc gtg gac atc ctg cgg cgc tgg aaa gac tat ggg tgc cag cgc gtc 816

aag tac ggc cag tgc tgg gtc ttc gct gct gtg gcc tgc aca gtg ctg 864

cgg tgc ctt ggc atc ccc acc cga gtc gtg acc aac ttt aac tca gcc 912

cac gac cag aac agc aac ctg ctc atc gag tac ttc cga aac gag tct 960

ggg gag atc gag ggg aac aag agc gag atg atc tgg aac ttc cac tgc 1008

tgg gtg gag tcg tgg atg acc agg ccg gac ctg gag cct ggg tac gag 1056

ggg tgg cag gcc ctg gac ccc aca ccc cag gag aag agt gaa ggg aca 1104

tac tgc tgt ggc cca gtt ccg gtt cga gcc atc aag gag ggc cac ctg 1152

aac gtc aag tat gat gca cct ttc gtg ttt gct gag gtc aat gct gac 1200

gtg gtg aac tgg atc cgg cag aaa gat ggg tcc ctg cgc aag tcc atc 1248

aac cat ttg gtt gtg ggg ctg aag atc agt act aag agt gtg ggc cgc 1296

gat gag cga gag gac atc acc cac acc tac aag tac cca gag gga tct 1344

gaa gag gag cgg gaa gct ttt gtt agg gcc aac cac cta aat aaa ctg 1392

gcc aca aag gaa gag gct cag gag gaa acg gga gtg gcc atg cgg atc 1440

cgt gtg ggc cag aac atg act atg ggc agt gac ttt gac atc ttt gcc 1488

tac atc acc aat ggc act gct gag agc cac gaa tgc caa ctc ctg ctc 1536

tgt gca cgc atc gtc agc tac aat gga gtc ctg ggg ccc gtg tgc agc 1584

acc aac gac ctg ctc aac ctg acc ctg gat ccc ttc tcg gag aac agc 1632

atc ccc ctg cac atc ctc tat gag aag tac ggt gac tac ctg act gag 1680

tcc aac ctc atc aag gtg cga ggc ctc ctt atc gag cca gca gcc aac 1728

agc tat gta ttg gcc gag agg gac att tac ctg gag aat cca gaa atc 1776

aag atc cgg gtc ttg ggg gag ccc aag cag aac cgc aag ctg att gct 1824

gag gtg tct ctg aag aat ccg ctc cct gtg ccg ctg ctg ggt tgt atc 1872

ttc acc gtg gaa gga gct ggc ctg acc aag gac cag aag tcg gtg gag 1920

gtc cca gac ccc gtg gaa gca ggg gag caa gcg aag gta cgg gtg gac 1968

ctg ctg ccg acg gag gtg ggc ctc cac aag ctg gtg gtg aac ttc gag 2016

tgc gac aag ctg aag gcc gtg aag ggc tat cgg aac gtc atc atc ggc 2064

ccc gcc taa 2073

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ggtgagttat tgtaaagttc tacaaagcta atttaaaagt tattgcatta acttatttca 180

tattacaaac aagagtgtca atggaacaat gaaaaccata tgacatacta taattttgtt 240

tttattattg aaattatata attcaaagag aataaatcca catagccgta aagttctaca 300

tgtggtgcat taccaaaata tatatagctt acaaaacatg acaagcttag tttgaaaaat 360

tgcaatcctt atcacattga cacataaagt gagtgatgag tcataatatt attttctttg 420

ctacccatca tgtatatatg atagccacaa agttactttg atgatgatat caaagaacat 480

ttttaggtgc acctaacaga atatccaaat aatatgactc acttagatca taatagagca 540

tcaagtaaaa ctaacactct aaagcaaccg atgggaaagc atctataaat agacaagcac 600

aatgaaaatc ctcatcatcc ttcaccacaa ttcaaatatt atagttgaag catagtagta 660

gaatccaaca acaatgaaga tcattttcgt atttgctctc cttgctattg ttgcatgcaa 720

tgcctctgcg tctaga 736

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<210> 16
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<210> 17
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<400> 17

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<210> 18
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tctagaatgg cactactcga catggttag 29

<210> 19
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<400> 19

caccatgcaa gctgcagaga g 21

<210> 20
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<400> 20

tctagatatg gctaagcggt tagtcctc 28

<210> 21
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gatatctgcg agctgcagag agttc 25

<210> 22
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<210> 25
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gtcgacatgc ctaagcacca tgcgag 26

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<210> 28
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<210> 29
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<210> 30
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<210> 33
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<210> 34
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<212> DNA
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<220>
<223> PLT237 forward primer for amplification of guinea pig gene transglutaminase

<400> 34

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<220>
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<400> 35

gagctcttag gcggggccga tgatgacg 28

<210> 36
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<223> Sequence derived from wheat storage proteins wherein the allergenic amino acid is eliminated (Gln at position 6 may be mutated)

<400> 36

Pro Phe Pro Gln Pro Gln Leu Pro Tyr
1 5

<210> 37
<211> 9
<212> PRT
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<220>
<223> Sequence derived from wheat storage proteins wherein the allergenic amino acid is eliminated (Gln at position 4 may be mutated)

<400> 37

Pro Gln Pro Gln Leu Pro Tyr Pro Gln
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<210> 38
<211> 9
<212> PRT
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<220>
<223> Sequence derived from wheat storage proteins wherein the allergenic amino acid is eliminated (Gln at position 6 may be mutated)

<400> 38

Pro Tyr Pro Gln Pro Gln Leu Pro Tyr
1 5

<210> 39
<211> 13
<212> PRT
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<220>
<223> Sequence derived from wheat storage proteins wherein the allergenic amino acid is eliminated (Gln at position 10 may be mutated)

<400> 39

Leu Gln Leu Gln Pro Phe Pro Gln Pro Gln Leu Pro Tyr
1 5 10

<210> 40
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<212> PRT
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<220>
<223> Sequence derived from wheat storage proteins wherein the allergenic amino acid is eliminated (Tyr and Ser at positions 5 and 8 may be mutated)

<400> 40

Gln Gln Gly Tyr Tyr Pro Thr Ser Pro Gln Gln Ser Gly
1 5 10

<210> 41
<211> 8
<212> PRT
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Gln Gln Gly Tyr Tyr Pro Thr Ser
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<210> 42
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Sequence derived from wheat storage proteins wherein the allergenic amino acid is eliminated (Gln at positions 4, 5 and 7 may be mutated)

<400> 42

Pro Phe Ser Gln Gln Gln Gln Gln
1 5

<210> 43
<211> 12
<212> PRT
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<220>
<223> Sequence derived from wheat storage proteins wherein the allergenic amino acid is eliminated (Gln at positions 4 and 6 may be mutated)

<400> 43

Gln Ser Glu Gln Ser Gln Gln Pro Phe Gln Pro Gln
1 5 10

<210> 44
<211> 9
<212> PRT
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<223> Gln at position 4 may be mutated

<220>
<221> misc_feature
<222> (2)..(2)
<223> Xaa can be any naturally occurring amino acid

<400> 44

Gln Xaa Pro Gln Gln Pro Gln Gln Phe
1 5